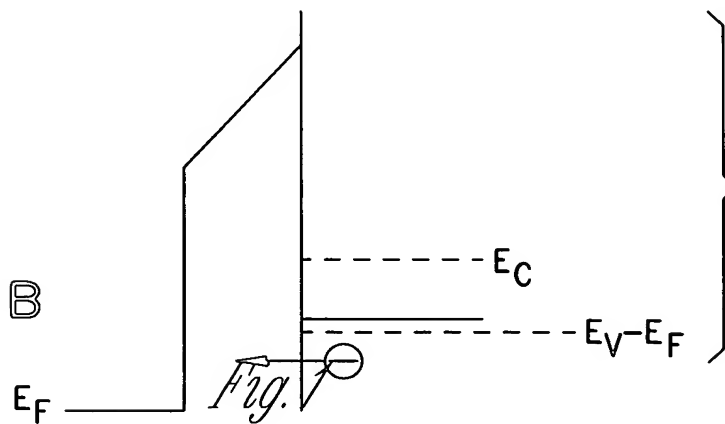
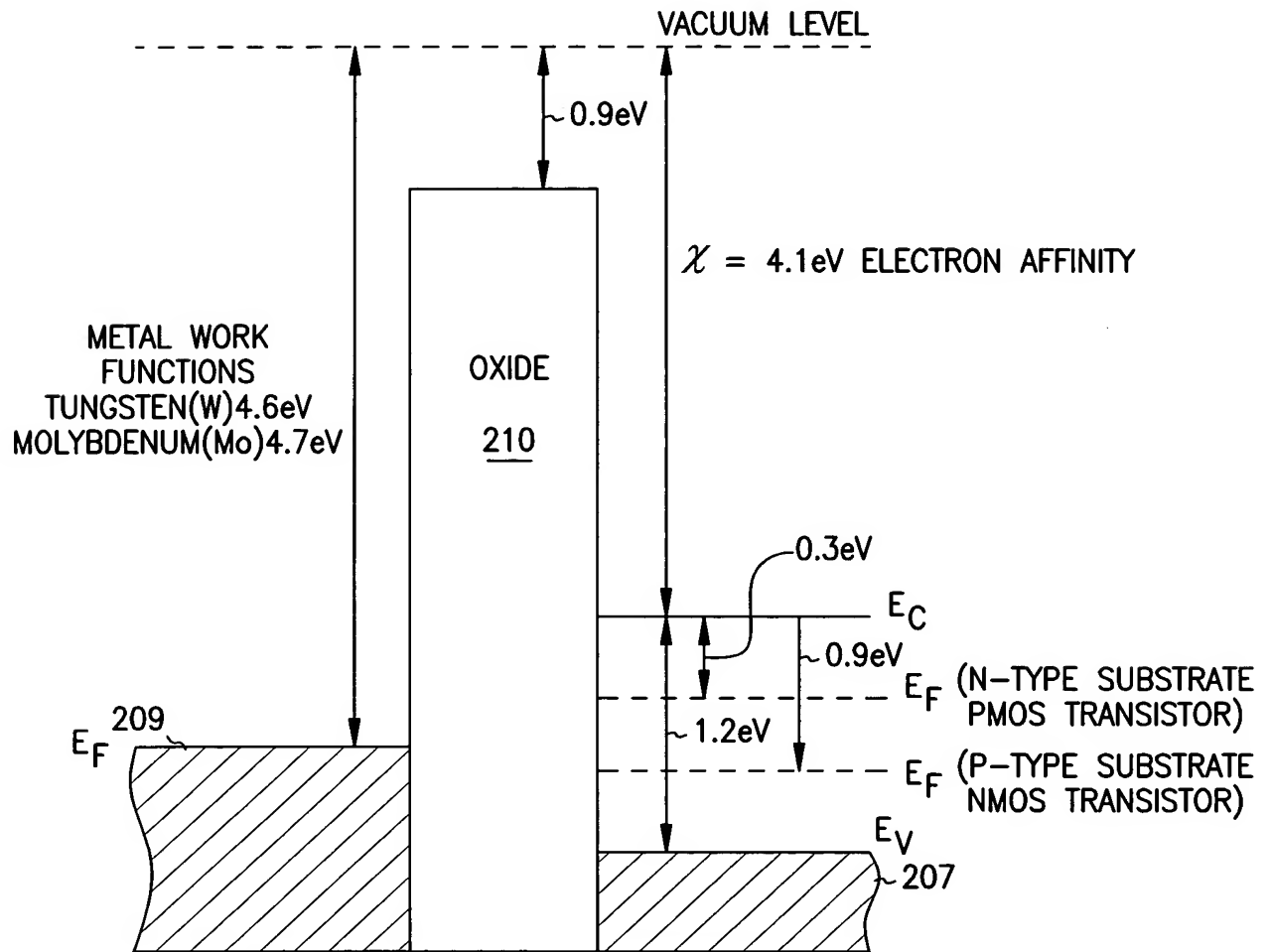


FIG. 1B



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"MID-GAP" METALS USED FOR OPTIMIZING NMOS AND PMOS TRANSISTOR THRESHOLDS VOLTAGES; METAL SEMICONDUCTOR WORK FUNCTION DIFFERENCES

$$\text{NMOS: } \Phi_{\text{ms}} = 4.7 - 5.0\text{eV} = -0.3\text{V}$$

$$\text{PMOS: } \Phi_{\text{ms}} = 4.7 - 4.4\text{eV} = +0.3\text{V}$$

FIG. 2
 (PRIOR ART)

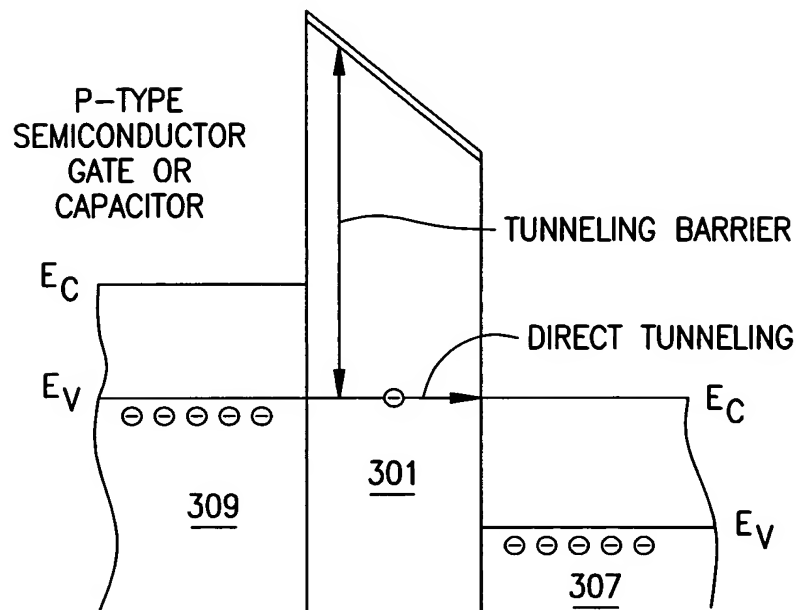


FIG. 3A

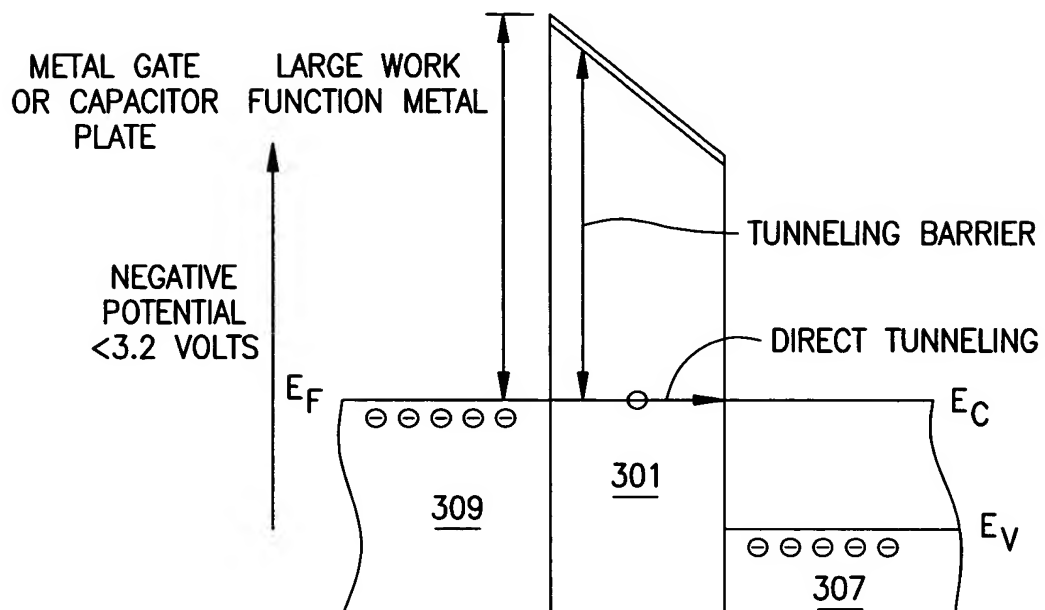


FIG. 3B

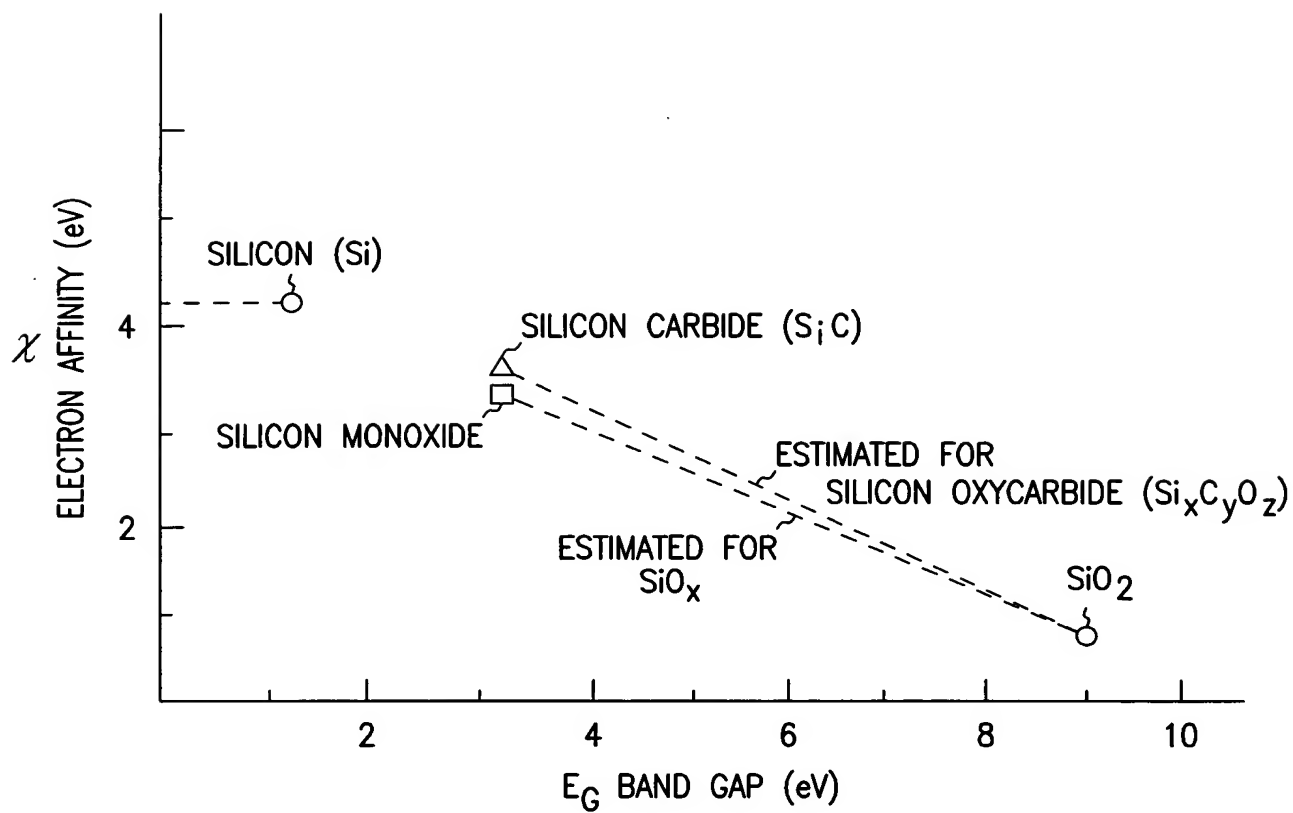
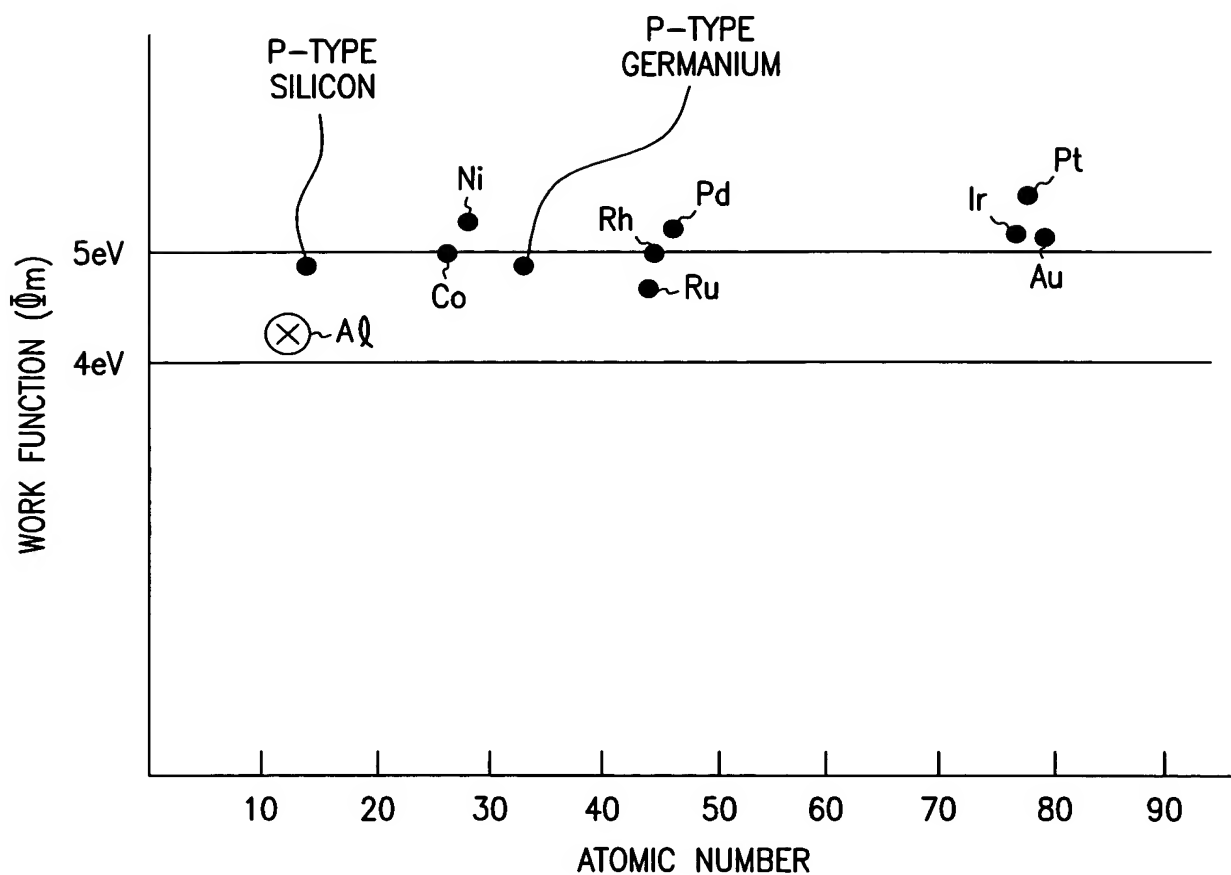


FIG. 4



LARGE WORK FUNCTION METALS

FIG. 5

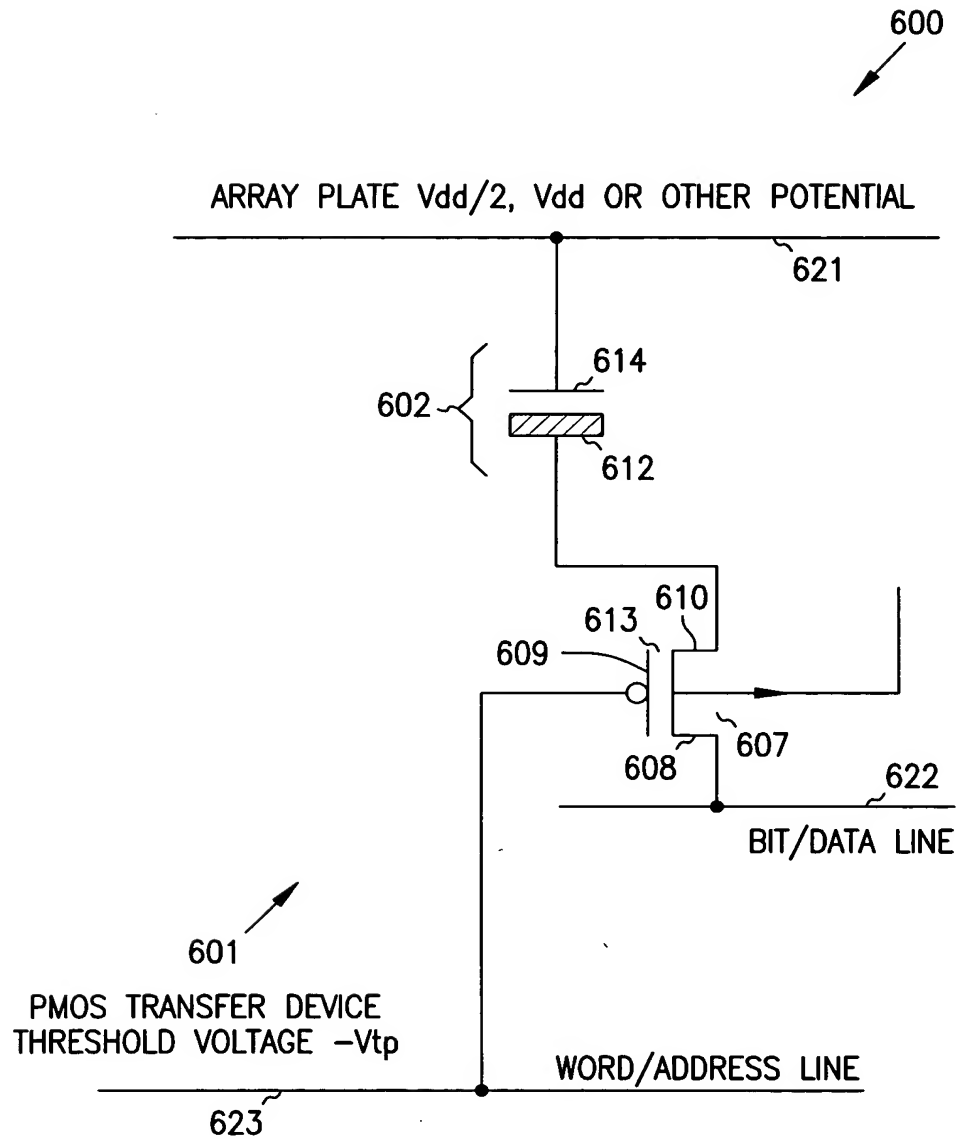


FIG. 6

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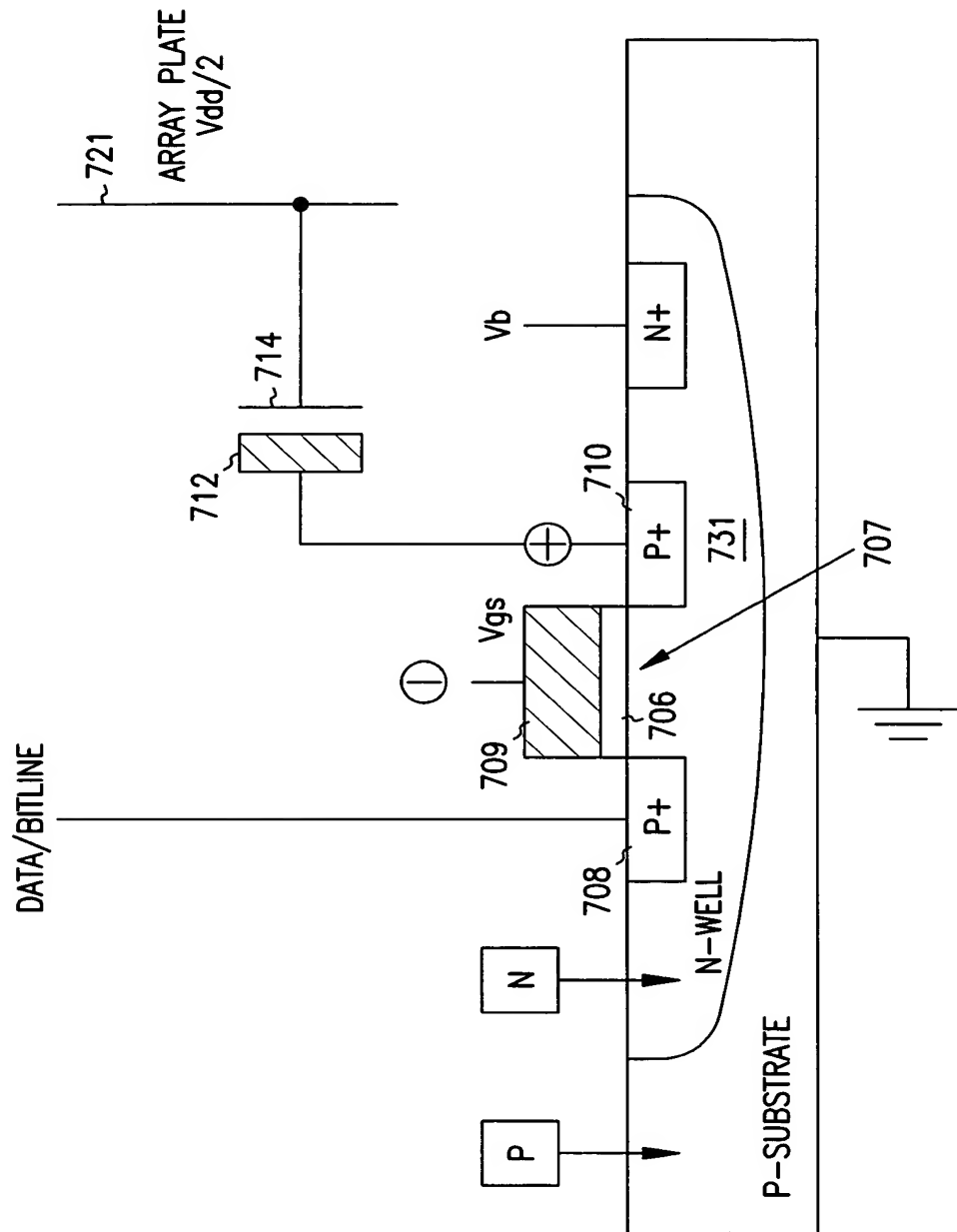


FIG. 7